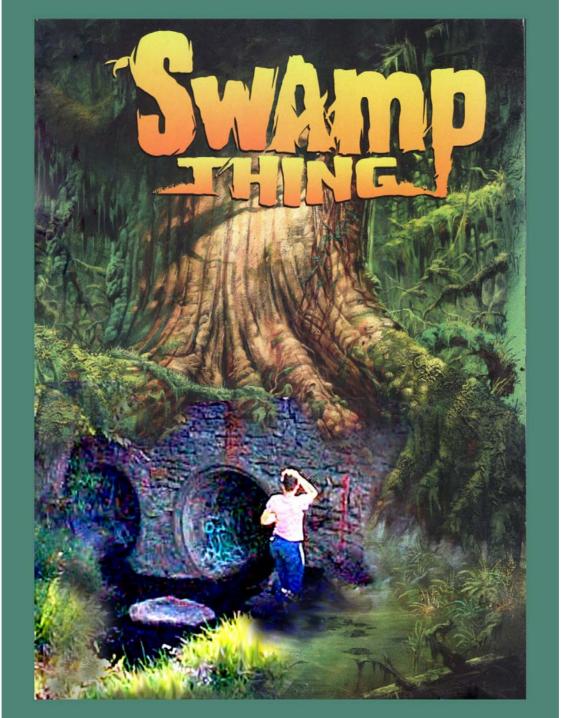
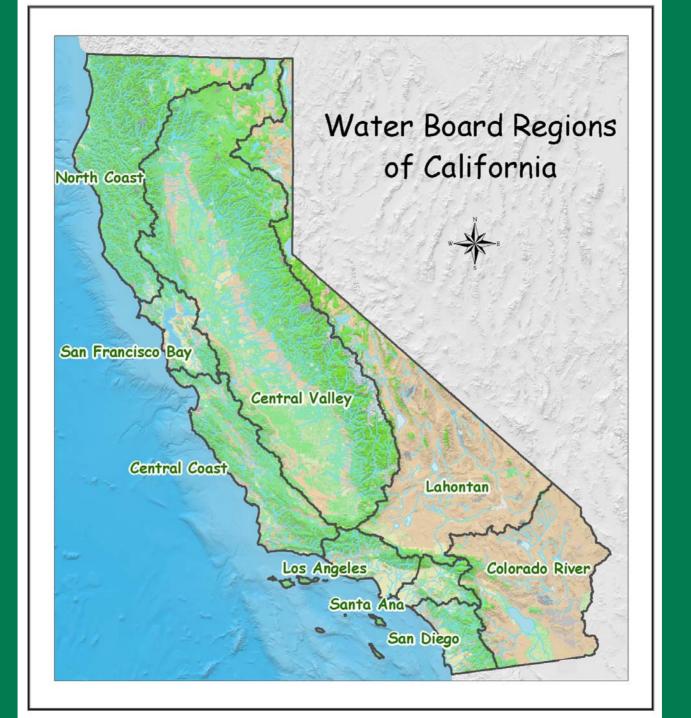
## California's Surface Water Ambient Monitoring Program

"SWAMP" Update - 2004







# SWAMP: Required by AB 982 (WC sec.13191)

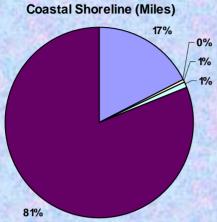
- Comprehensive state program (surface water)
- Coordinate all <u>Board</u> ambient water quality monitoring Programs/projects
- High Quality Data
- Comparable data
- Accessible

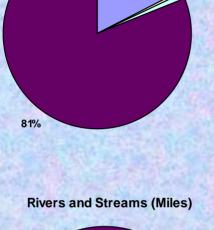
 SWAMP is a state framework to coordinate consistent and scientifically defensible methods and strategies for improving water quality monitoring, assessment, and reporting. It will be coordinated with products of the NWQMC and "borrows" liberally from other successful programs.

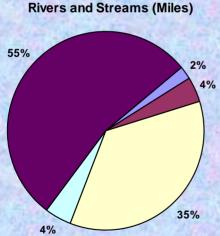
## The Challenge: CA

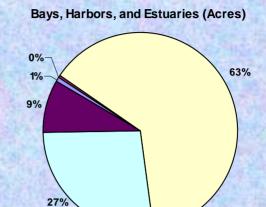
- 190 hydrologic units (655 hydrologic sub-areas)
- 211,000+ miles rivers and streams
- Over 10,000 lakes (1.6+ million acres)
- Over 1,300,000+ acres of bays and estuaries
- 1,609 miles of coastline

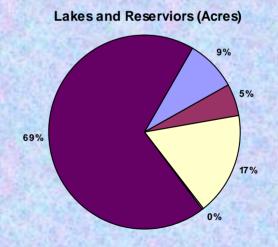
#### **Percent of Water Bodies Supporting Aquatic Life**





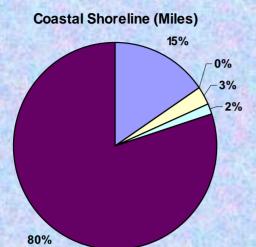


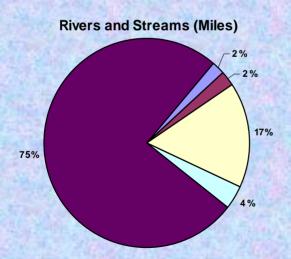


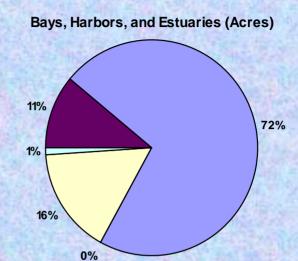


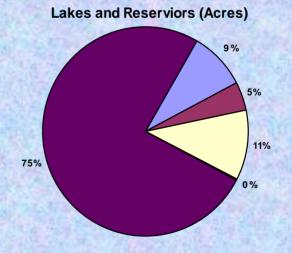


#### **Percent of Water Bodies Supporting Swimming**













## The Regulatory Challenge:

- CWA section 305(b) report
- CWA section 303(d) list, TMDLs
- Porter Cologne, Basin Plans
- Implementation, 319h
- CWA section 106(e)

#### SWAMP November 2000

- Proposed a cost efficient monitoring program to meet all CWA needs for all water types and pollutant sources
- Requested
  - \$59 to \$115 million
  - 87 to 132 PYs

(\$3,400,000)

(17 PYs)

WDPF surcharge

## 2003-04 Reality Check

- Existing goals don't match the fiscal reality or current program
- Need realistic short-term objectives (priorities)
- Need longer-term implementation strategy
- Need to pursue collaborative alternatives to data generation

## Implementation Strategy

- Monitoring Program Strategy
- Monitoring Objectives
- Monitoring Design
- Core Indicators of Water Quality
- Quality Assurance
- Data Management
- Data Analysis/Assessment (CALM)
- Reporting
- Programmatic Evaluation
- General Support and Infrastructure

### Building "Infrastructure"

(Or, what to do in a budget crisis)

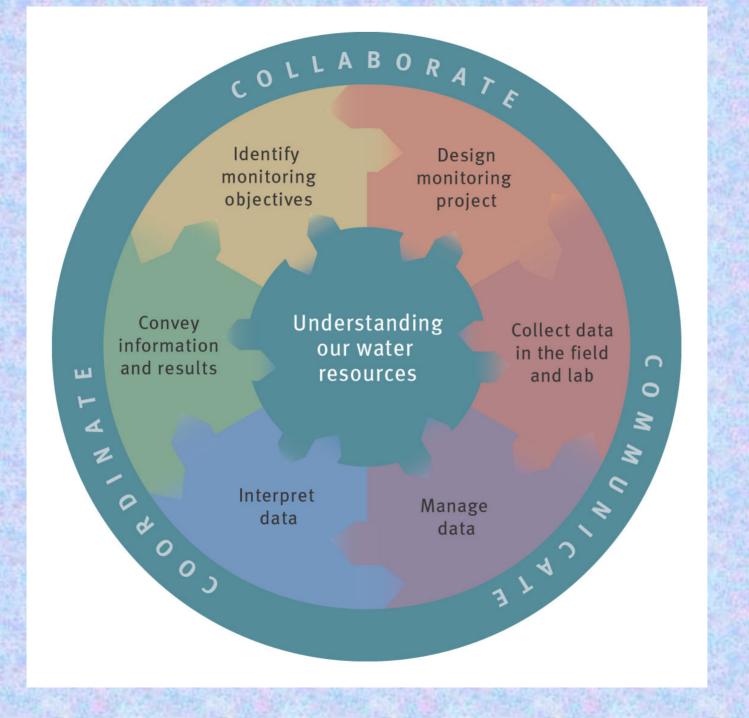
- Monitoring Framework
- Information Exchange Network
- Quality Assurance Program
- Tool Box and Training
- Nested Monitoring Design

#### What's a Monitoring Framework?

- The process of monitoring and assessment should principally be seen as a sequence of related activities that
  - start with the definition of information needs and
  - end with the use of the information product.

UN/ECE Task Force on Monitoring and Assessment (2000)





### Building "Infrastructure"

(Or, what to do in a budget crisis)

- Monitoring Framework
- Information Exchange Network
- Quality Assurance Program
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- Nested Monitoring Design

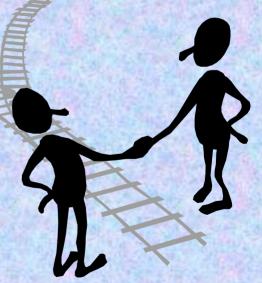
## Why Focus on Collaboration & Comparability?

 Critical differences in project design, methods, data analysis, and data management make it difficult for monitoring information to be shared by more potential data users.



#### Collaboration and Comparability

Development of a national and state monitoring strategy requires that we create a framework for *collaboration* and *comparability* among programs



## Propositions 13, 40 and 50

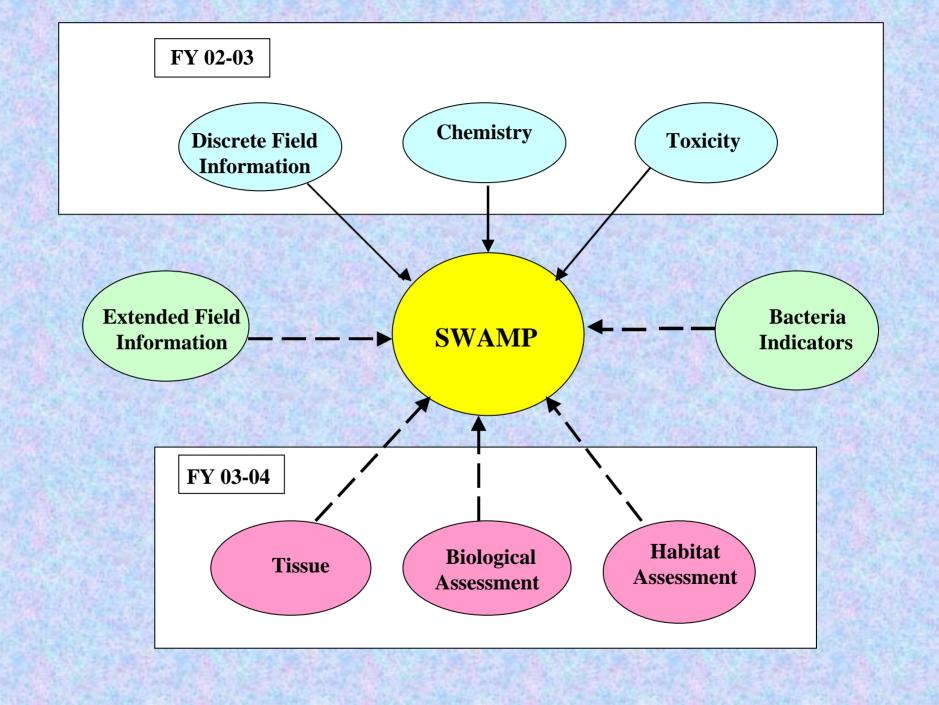
- \$4.4 billion plus !!!!!
- 880 plus projects
- Once in a lifetime opportunity to:
  - Improve water quality
  - Determine which resource protection actions are most effective
  - Implement TMDL, NPS, WMI, etc.
- CA Water Code: Must be "SWAMP consistent"

### Method Comparability

- Consistent and objective sampling, analysis and assessment methods:
  - Sampling: standard field protocols;
    - Training Module (CD) 2004
  - Analysis: performance based;
  - Assessment: 303(d) Policy

## **Data Comparability**

- Inclusive of all types of water quality monitoring -
  - chemical, toxicity and field data
  - tissue, bacteria indicators, biological, habitat characteristics
- Training
  - On-site
  - User's guide



# Data Integration & Accessibility

- Integrated data management
- Public Access

(WQDE of Methods Board!)

# CA Environmental Data Network (CEDEN) - 50 Entities















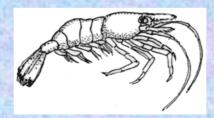
## Data Types







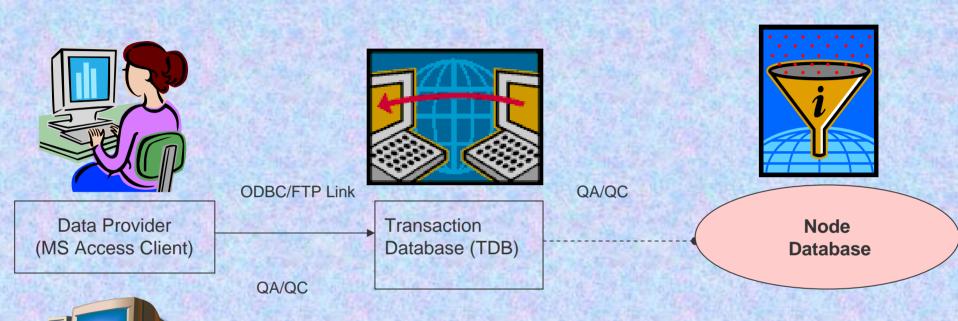




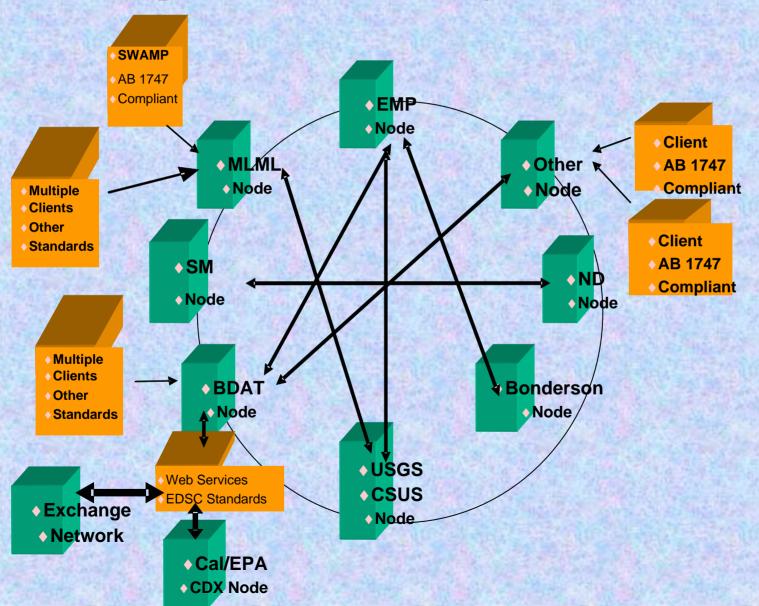




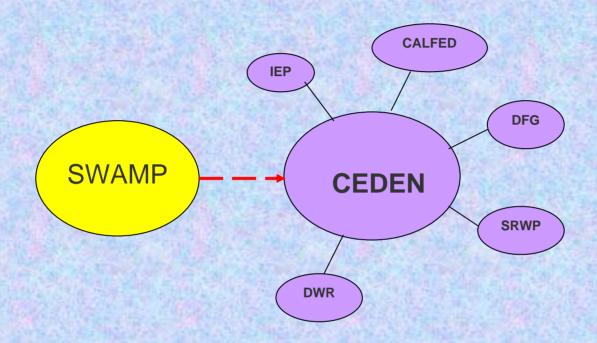
**Background/Distributed Data Management System** 



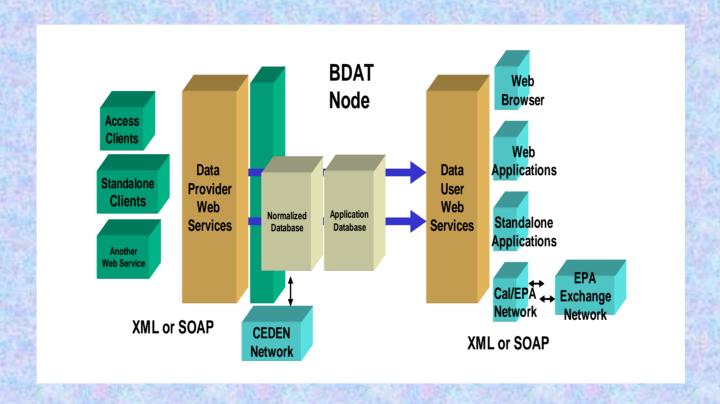
**Local Client Databases** 



#### Database Integration

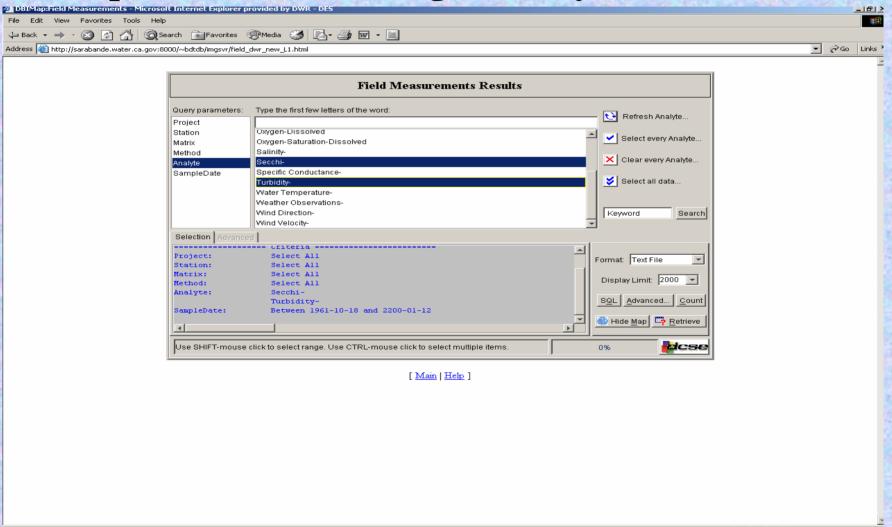


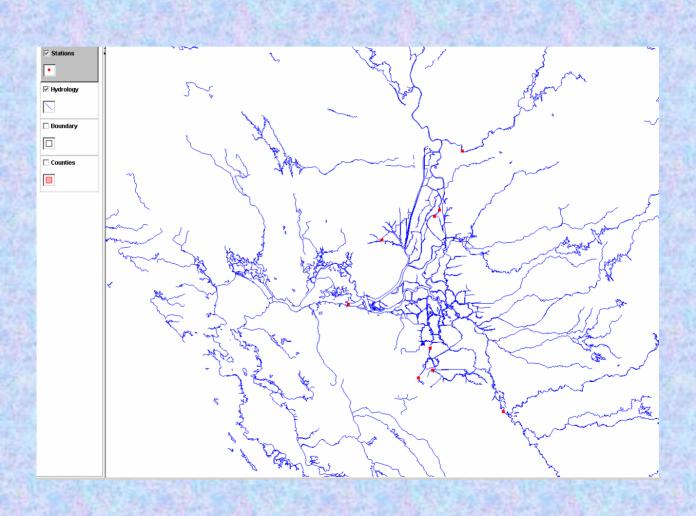
SWAMP = Surface Water Ambient Monitoring Program
BDAT = Bay-Delta and Tributaries Database
IEP = Interagency Ecological Program
DFG = Department of Fish & Game
SRWP = Sacramento River Watershed Program
DWR = Department of Water Resources
CALFED = State and Federal Interagency Group

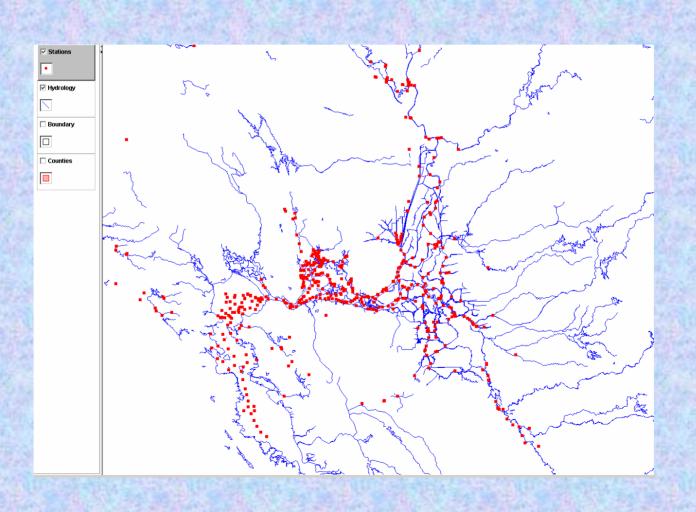


### Background-Data Element Standards

- For Projects using funds from Prop 13, 40 or 50 we will be using the standards required under AB 1747 or "SWAMP Standards"
- \*All data shared through CEDEN will be mapped to the EDSC Standards.
- CERES will be doing the metadata Cataloging for CEDEN







### Building "Infrastructure"

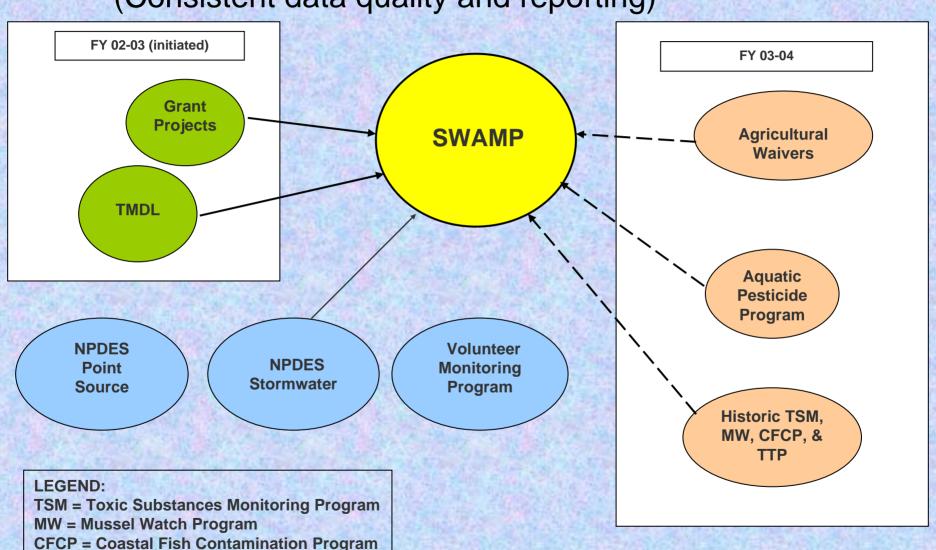
(Or, what to do in a budget crisis)

- Monitoring Framework
- Information Exchange Network
- Quality Assurance Program
- Tool Box and Training
- Nested Monitoring Design

#### Monitoring Coordination

(Consistent data quality and reporting)

TTP = Toxicity Testing Program



#### 2004 Grant Projects

- 218 projects
- 47% associated with a TMDL
- 29% involve volunteer monitoring groups

#### QA strategy

- Consistent data quality assurance:
  - Statewide QMP, 1st Ed.
- QA Tool Box:
  - Training Courses
  - Template, Check List Models, "Boilerplate"
  - Expert System (June 2005)

#### QA Expert System (Dec. 2005?)

- SWAMP Advisor
- Produce a "SWAMP Compatible" QAPP
- Lead users through complex decision making--provides expert advice
- User learns why info. is needed
- User learns <u>how</u> to implement

#### Benefits

- Quick
- Consistent
- Excellent Data Quality
- Easy QAPP approval
- Teaching Tool
- Allows focus on QA not PP

#### **QAPP** Implementation

- Protocols
- Audits (lab, field, regions)
- Intercomparison Exercises
- Performance Evaluation Studies
- QMP revision
- Data Verification/Validation
- Toolbox

#### Building "Infrastructure"

(Or, what to do in a budget crisis)

- Monitoring Framework
- Information Exchange Network
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#### **SWAMP Training Academy**

### -All SWAMP "partners" -Use of SWAMP "toolbox"

- Introductory Monitoring Design
- Advanced Monitoring Design
- SWAMP Field Methods (CD rom)
- Introductory Quality Assurance
- SWAMP Advisor
- SWAMP Data Management
- SWAMP Collaboration Workshop
- Annual mtg CA Bioassessment Workgroup
- SWAMP for Ag. Coalitions
- Monitoring Grant Project Effectiveness

#### Building "Infrastructure"

(Or, what to do in a budget crisis)

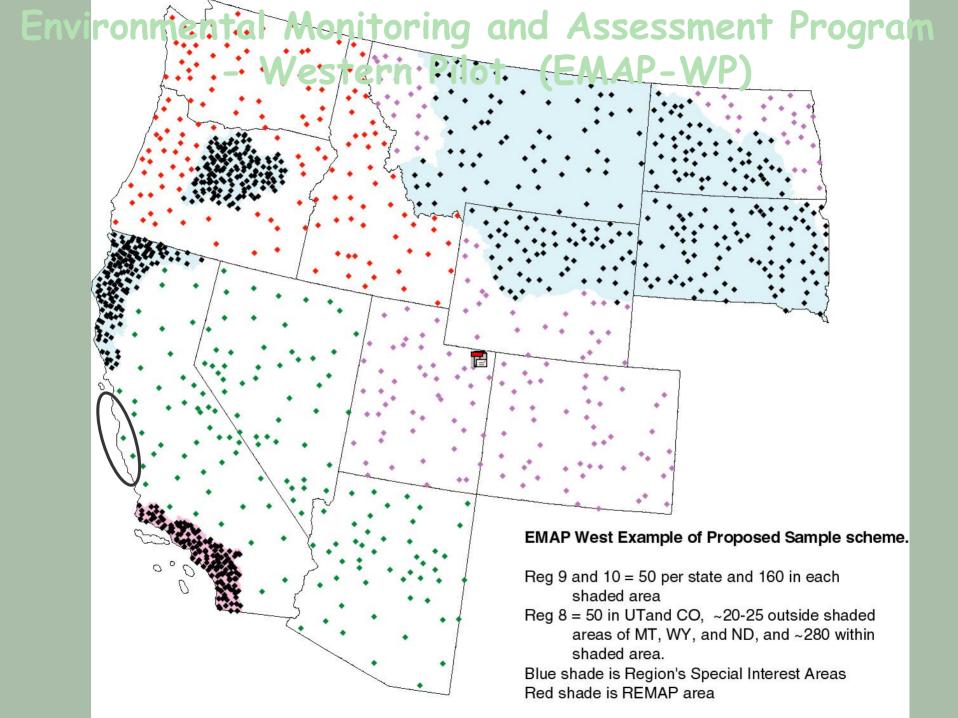
- Monitoring Framework
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#### SWAMP:

- Required by AB 982 (WC sec.13191)
- Coordinate all <u>Board</u> ambient water quality monitoring Programs/projects
  - Comprehensive state program (surface water)
  - High Quality Data
  - Comparable data
  - Accessible

## State and Regional Components

- Scale of questions, objectives and design
- State program:
  - Asks broad questions:
    - What % of state's waterbodies are toxic?
  - Uses of program
    - Legislative reports
    - 305b report
    - EPIC
- Regional program's objectives and design more specific
  - Are specific waterbodies impaired?
    - 303d list
  - Are specific management/restoration efforts successful?



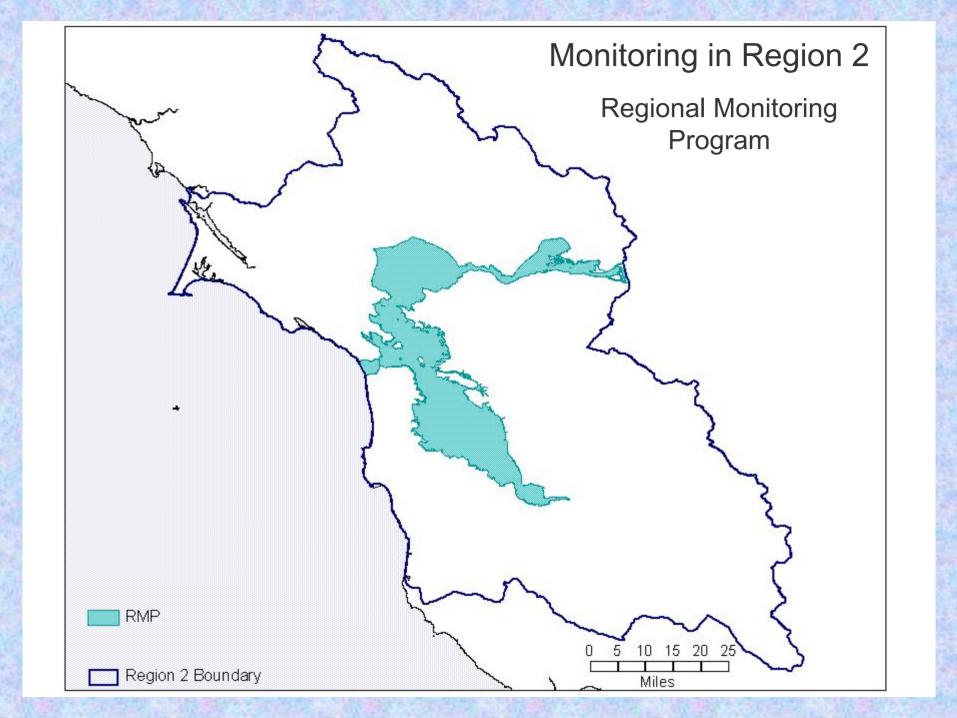
#### Watershed Sampling Design

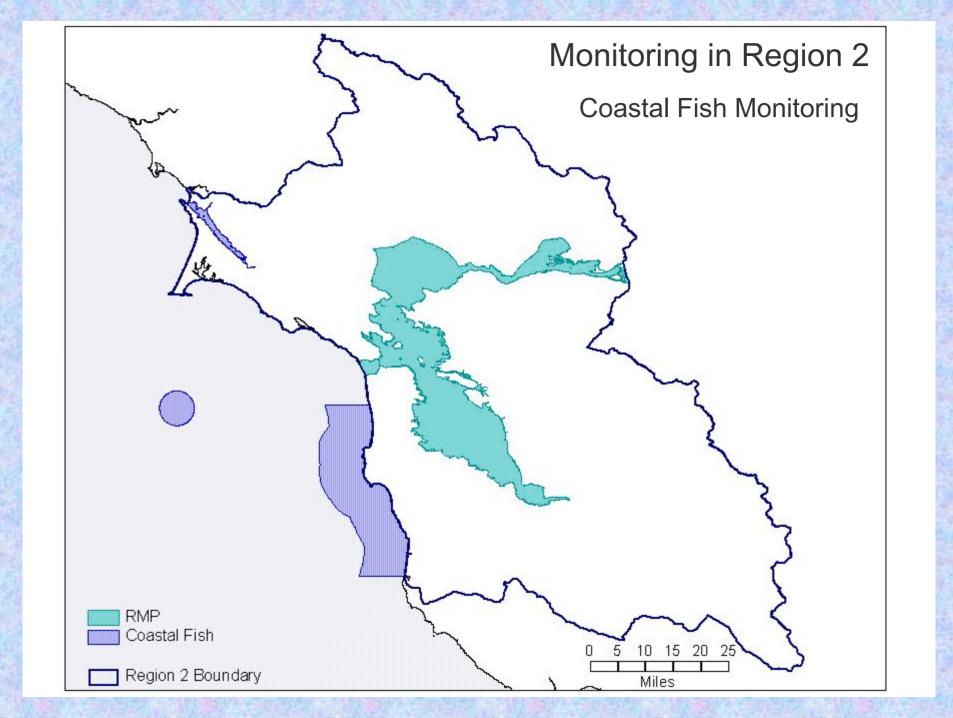
- Rotating watersheds
- Deterministic design to
   answer questions of water quality impact:
  - Land and water use
  - Beneficial uses
  - Previous data
- Sampling at confluences
- Reference sites
- Access

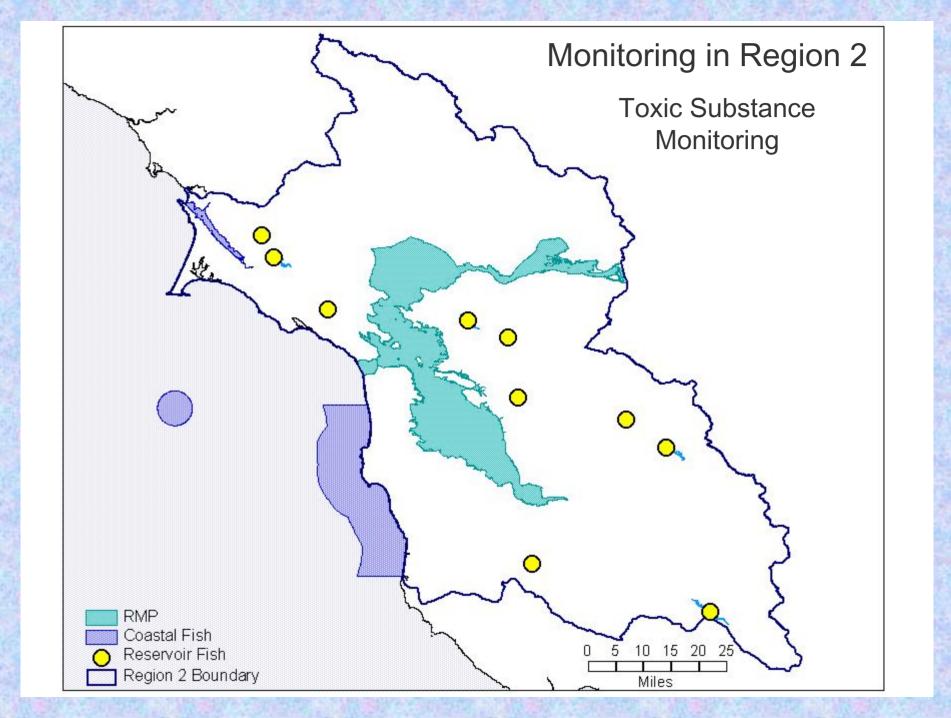


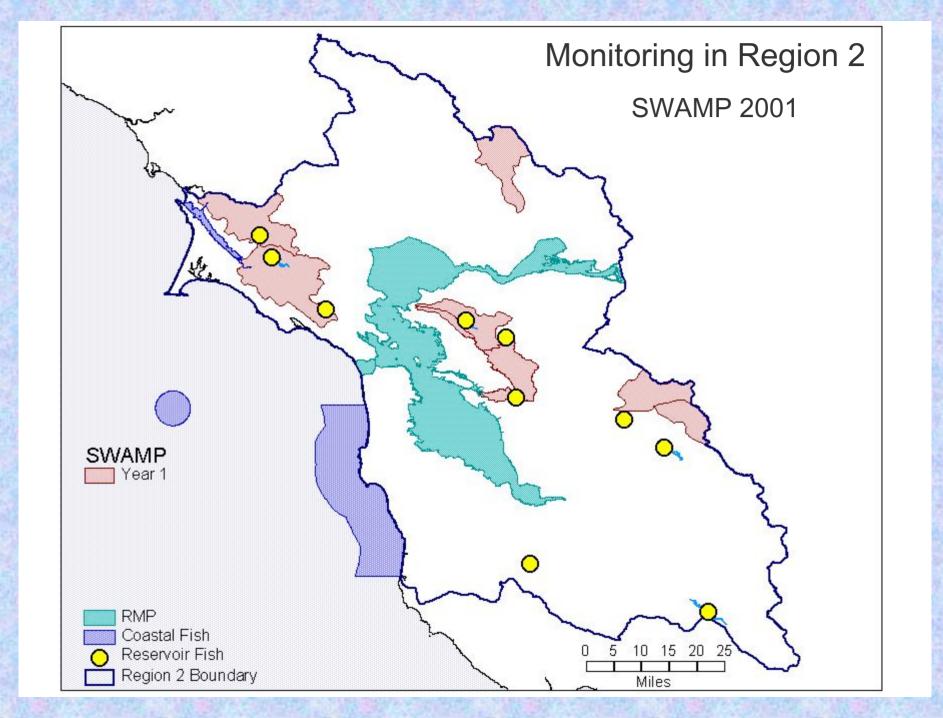
#### **Watershed Sampling Parameters**

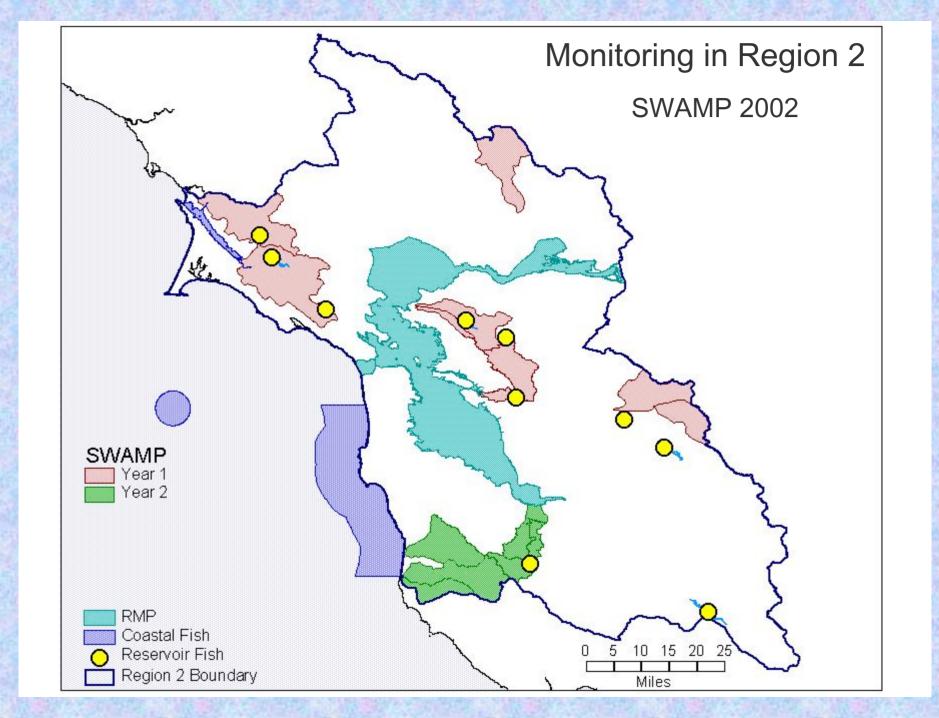
- Tier 1 (all stations/spring)
  - Bioassessments
  - Qualitative physical habitat assessments
  - Basic WQ parameters
- Tier 2 (subset of stations/3 hydrologic regimes)
  - Chemical analysis (pollutants)
  - Toxicity (3 species)
  - Nutrients
  - Continuous WQ measurements (probe)
  - Trash assessments (4x per year)
  - Bacteria (5 measurements during summer)
- Integrator site (bottom of watershed) sediment (chemistry and toxicity), tissue

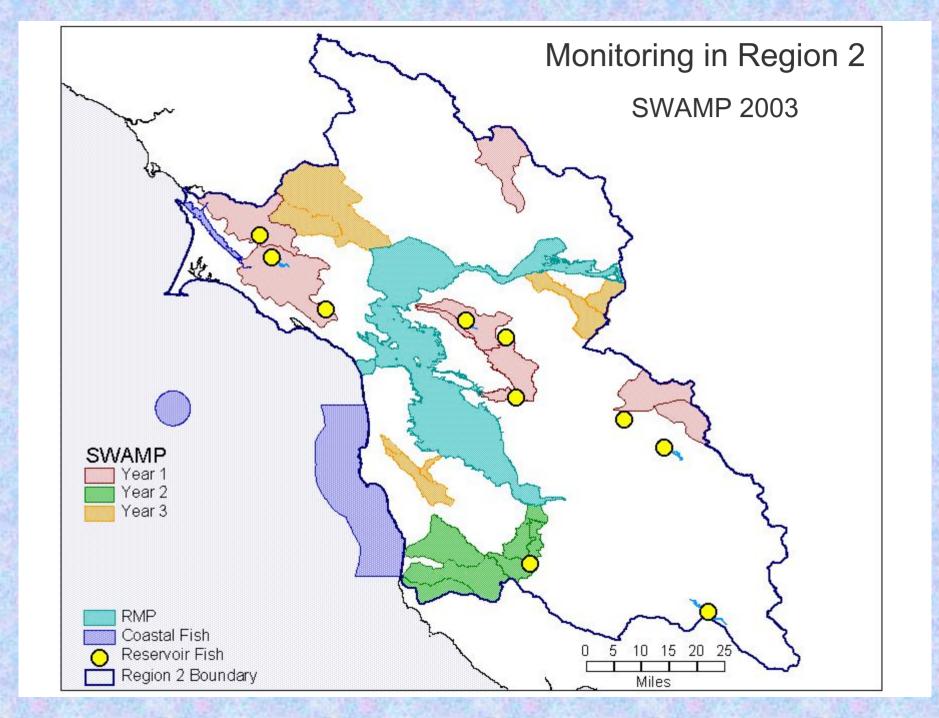


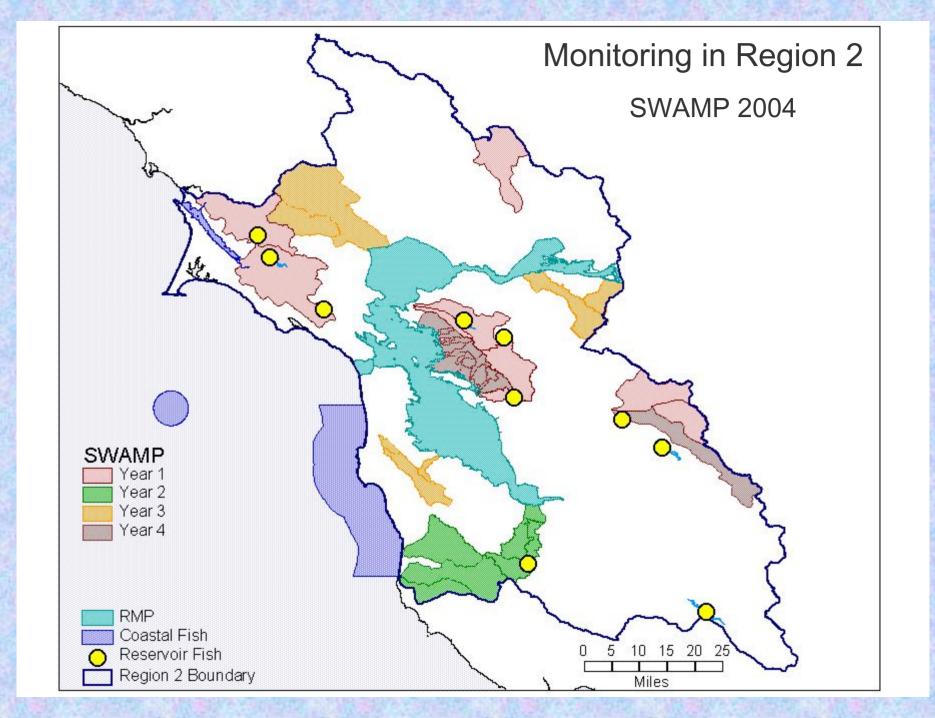


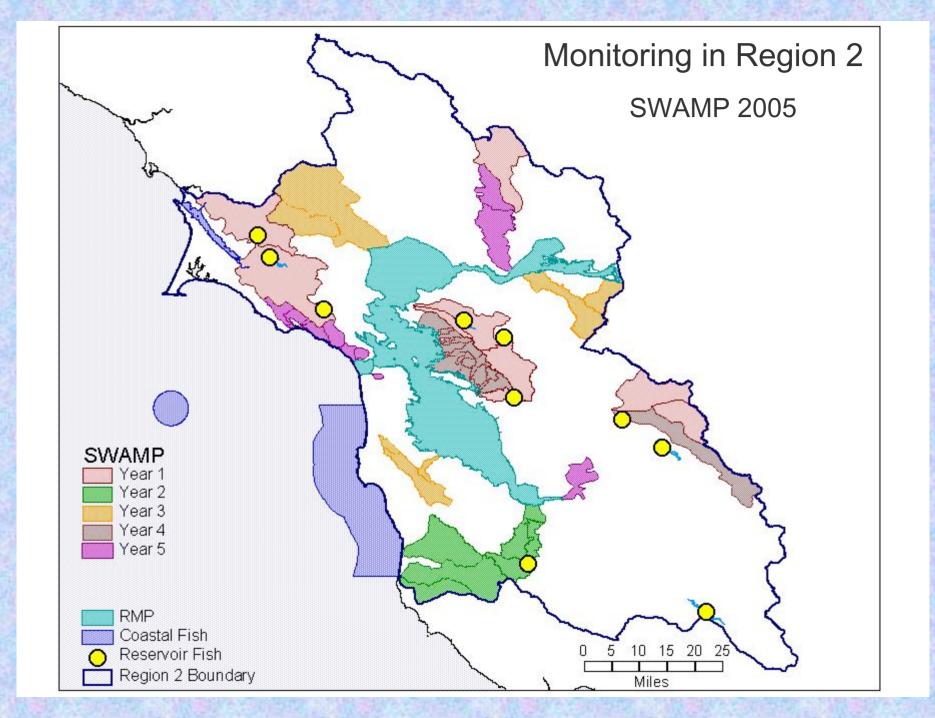


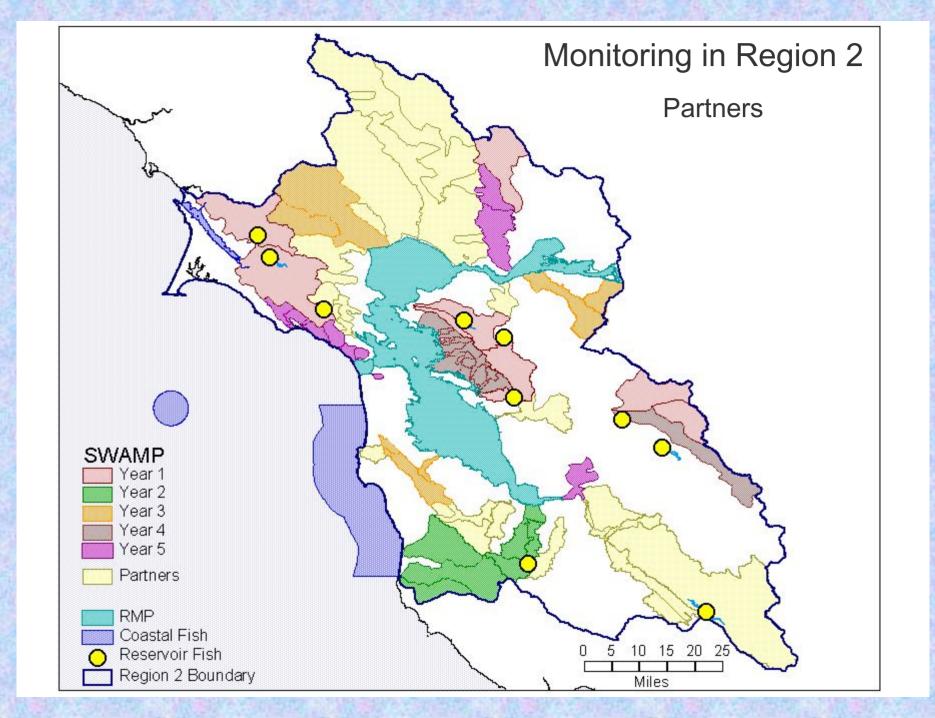


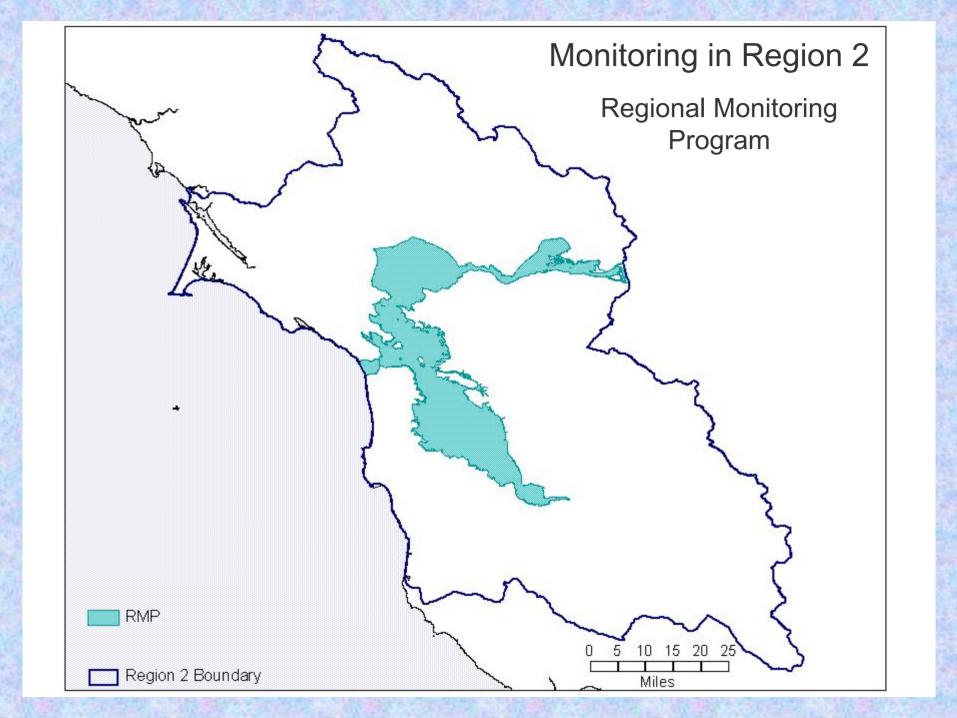


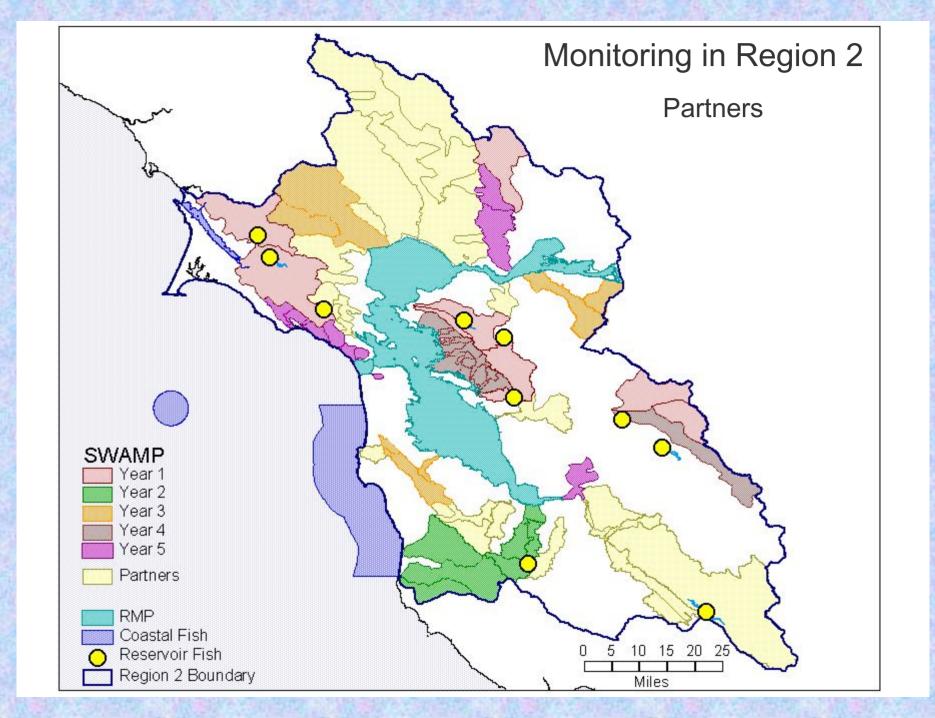














# CLEAN BEACHES INITIATIVE Working to reduce beach contamination



## There are 4 major elements to Clean Beaches Initiative

- Public reporting
- Rapid test for indicator bacteria
- Enhancing interagency communication and collaboration
- Funding to local agencies

#### Why Beaches?

- Beach usage is higher than the other states combined.
- It's what is great about California
- California's coastal tourism brings \$52 billion and supports 707,000 related jobs.

California Home Friday, July 30, 2004

#### Welcome to California

Home

**Board Business** 

Laws/Regulations

News/Media Info

Regional Boards

**Water Quality** 

Water Rights

Water Education

**Beach Watch** 



State Water Resources Control Board 1001 | Street Sacramento. CA 95814 P.O. Box 100 Sacramento, CA 95812 (916) 341-5250 fax (916) 341-5252 Contact Us



California Environmental Protection Agency
STATE WATER RESOURCES CONTROL BOARD BEACH



Beach Watch for California's beaches



local health officers can enter or modify data relevant to their beaches, including beach closures, postings, and background information for agencies, beaches and data

> Public Access (No password required)

Local Health Agencies (Password required)

Administrators (Password required)

Contact us (For comments or questions)

#### **CBI Grant Program**

- Proposition 13 \$32.298 million of Coastal Non-Point Source Control Program grants.
- Proposition 40 \$46 million for clean beach projects
- Proposition 50 coming soon
- Los Angeles \$500,000 storm water run-off bond

#### **Advisory Groups**

- AB 982 Public Advisory Group
  - 12 "regulated" community
  - 12 "environmental" groups
- SWAMP RT (State and Fed. Agencies)
- Scientific Planning and Review Committee (SPARC)

2005--combine into TRAMPs

#### Next 24 Months

- Continue statewide & regional assessments
- Formation of (NPS) Monitoring Council
- Intra- & Inter-agency Outreach/Education
- Continue Training
- Reporting (305b, RB assessments)
- Public fact sheets
- Complete database development
- 2nd. Edition QMP
- 2nd SPARC (external peer review)

#### Outstanding Issues - Insufficient Resources

- Increase in SWAMP "partners"
- Consistency/Comparability = Training
- QA Coordination
- Requesting/receiving data
- Resistance to change

#### Questions?

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Division of Water Quality
State Water Resources Control Board
(916) 341-5573
Vconnor@waterboards.ca.gov

http://www.waterboards.ca.gov/swamp

